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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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03/31/2004

Yatin Hoskote

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7590

04/28/2009

INTEL/BSTZ

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EXAMINER

HARPER, KEVIN C

ART UNIT

PAPER NUMBER

2416

MAIL DATE

DELIVERY MODE

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/814,496	<b>Applicant(s)</b> HOSKOTE ET AL.	
	<b>Examiner</b> Kevin C. Harper	<b>Art Unit</b> 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-15 and 18-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-30 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-9, 13-15, 18-20 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 10, 11, 21 and 25-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

Applicant's arguments filed January 20, 2009 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Frelmuth in view of Starr. The indicated allowability of these claims has been withdrawn in view of the newly discovered references.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7-9, 12-15, 18-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frelmuth et al. (US 2004/0199808) in view of Starr et al. (US 2005/0122986).

1. Regarding claims 1-3, 12-14 and 18, Frelmuth discloses a method comprising buffering packet header and payload data corresponding to inbound TCP packets received at a destination buffer (fig. 5, item 510, para. 59), performing TCP input processing on the header and payload (para. 59) and performing DMA transfer to move the payload data to a host memory (item 508; paras. 43-44).

2. However, Frelmuth does not disclose concurrently processing data via a multi-threaded hardware engine and concurrently transferring data via DMA while concurrently processing inbound packets. Starr discloses a multi-threaded processor for concurrently processing TCP packets (para. 4, lines 10-14) and concurrently transferring data payloads to a host via DMA

(para. 190, lines 8-15). Further regarding claims 2-3 and 13-14, the threads are arbitrated by saving and restoring thread states in hardware (para. 190; note: socket engine internal register content stored in the form of a context). Regarding claim 18, the DMA transmit queue information is stored (para. 68; note: TCB information is used by the DMA controller for data transfer). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have a multi-threaded processor in the invention of Frelmuth in order to perform data processing at a faster pace (para. 4, lines 10-14).

3. Further regarding claims 4 and 15, the invention discloses in Frelmuth in combination with Starr above discloses a dedicated TCP offload engine.

4. Regarding claim 7, in Frelmuth the data is pre-posted to the host memory (para. 59; note: batch processing for copying a buffer).

5. Regarding claims 8-9 and 19-20, in Frelmuth TCP connection context data is stored (para. 42; fig. 5, step 506).

6. Regarding claims 22-24, the combination discloses the method being performed by an IC (Frelmuth, fig. 5) having a processing engine, scheduler, host memory interface, NIC, a DMA controller a cache and a host interface.

### ***Allowable Subject Matter***

Claims 10-11, 21 and 25-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 28-30 are allowed.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Harper whose telephone number is 571-272-3166. The examiner can normally be reached weekdays from 11:00 AM to 7:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao, can be reached at 571-272-3174. The centralized fax number for the Patent Office is 571-273-8300. For non-official communications, the examiner's personal fax number is 571-273-3166 and the examiner's e-mail address is kevin.harper@uspto.gov.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications associated with a customer number is available through Private PAIR only. For more information about the PAIR system, see portal.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin C. Harper/

Primary Examiner, Art Unit 2416

April 26, 2009